

CLAIMS

1. An alignment apparatus, comprising:
  - a position detection optical system which detects a position of a mark formed on a street line of a substrate; and
    - a focus detection system which irradiates a detection light to the substrate, and which detects deviation between an irradiated region and a focused surface of the position detection optical system by detecting a reflected light of the detection light, the detection light is irradiated on a region of said street line on which is different from a region formed said mark.
  2. The alignment apparatus as set forth in claim 1, wherein:
    - said street line exists in a first direction and in a second direction perpendicularly crossing with the first direction; and
      - said focus detection system comprises a first detection system using a first detection light extending along with said first direction and a second detection system using a second detection light extending along with said second direction.
    3. The alignment apparatus as set forth in claim 2, wherein at least one of said first and second detection

systems detects a plurality of portions on said street lines.

4. The alignment apparatus as set forth in claim 2, wherein said focus detection system makes a comparison of intensities of reflection lights of said first and second detection lights, and performs focus detection by using either one of said first or second detection system in accordance with the comparison result.

5. The alignment apparatus as set forth in claim 2, wherein said focus detection system performs focus detection by using said first detection system when a street line on which a mark for position detection exists is along said first direction, and using said second detection system when the street line is along said second direction.

10 6. An exposure apparatus wherein a predetermined pattern is exposed to be transferred onto a substrate which is aligned by the alignment apparatus as set forth in claim 1.

15 7. An alignment method for aligning a substrate on which a mark is formed on a street line, including the steps of:

20 irradiating a detection light on a region on said street line before detecting a position of the mark by a position detection optical system, the region is

different from a region formed said mark;

detecting deviation between an irradiated region and a focused surface of said position detection optical system by detecting a reflected light of the detection light.

8. The alignment method as set forth in claim 7, wherein:

said street line exists in a first direction and a second direction perpendicularly crossing with the first direction; and

a first detection light extending along with said first direction and a second detection light extending along with said second direction are irradiated as said detection lights.

15. The alignment method as set forth in claim 8, wherein intensities of reflection lights of said first and second detection lights are compared and focus detection is performed by using either one of said first and second detection lights in accordance with the comparison result.

10. The alignment method as set forth in claim 8, wherein focus detection is performed by using said first detection light when a street line on which a mark for position detection exists is along said first direction, and using second detection light when the street line is

along said second direction.

11. An exposure method, including the steps of:  
aligning a photosensitive substrate as an object  
to be exposed by using the alignment method as set forth  
6 in claim 7; and  
exposing the aligned photosensitive substrate  
with a pattern formed on a mask.